Hideaki OHBA*: *Sedum subtile* Miq. from Tonkin, the first record of *Sedum* from the area covered by Lecomte's Flore de l'Indo-Chine**

大場秀章*：トンキンで故早田文蔵博士によって採集されていたヒメレンゲ

During his first trip to Indochina, the late Professor Bunzo Hayata collected a *Sedum* at Cha Pa, Tonkin (now in Vietnam) in 1917 (Fig. 1). This is probably the first collection of *Sedum* in the area covered by Lecomte's Flore de l'Indo-Chine (Lecomte 1907-50). Cha Pa, 22°20′N 103°50′E, is a mountain range (the peak 2,833 m in altitude) between Song Koi (Red) and Song Bo (Black) Rivers. Ito (1974) prepared Hayata's itinerary with an enumeration of the ferns collected. Hayata collected there numerous interesting ferns such as *Botrychium lanuginosum* Hook. et Grev., *Arachniodes Cavaleri* (Christ) Ohwi, *Acrophorus stipellatus* Moore, *Asplenium Wrightii* Eaton, and *Neolepisorus ensatus* (Thunb.) Ching (Ito 1974). He also collected *Helwingia himalaica* Hook. f. et Thoms. ex C.B. Clarke (Hara & Kurosawa 1975). I find *Penthorum chinense* Pursh in his collection from there.

Though the specimen of *Sedum* lacks any flower or fruit, it falls in the range of *Sedum subtile* Miq. by the several unique characters in its vegetative features. *S. subtile* has been known to occur in Central China (Shansi) and western parts of Japan disjunctively. It is noticeable that this exhibits differences between Japanese and Chinese populations in some features and can be divided into two subspecies, i.e. subsp. *subtile* and subsp. *chinense* (nov.). Cha Pa is farther isolated from these two localities of this species. Though *S. subtile* from Cha Pa seems to fall in subsp. *chinense*, I refrain from its infraspecific identification. It needs to gather more material particularly with flower and fruit. There are two species to be related to *Sedum subtile*. These are

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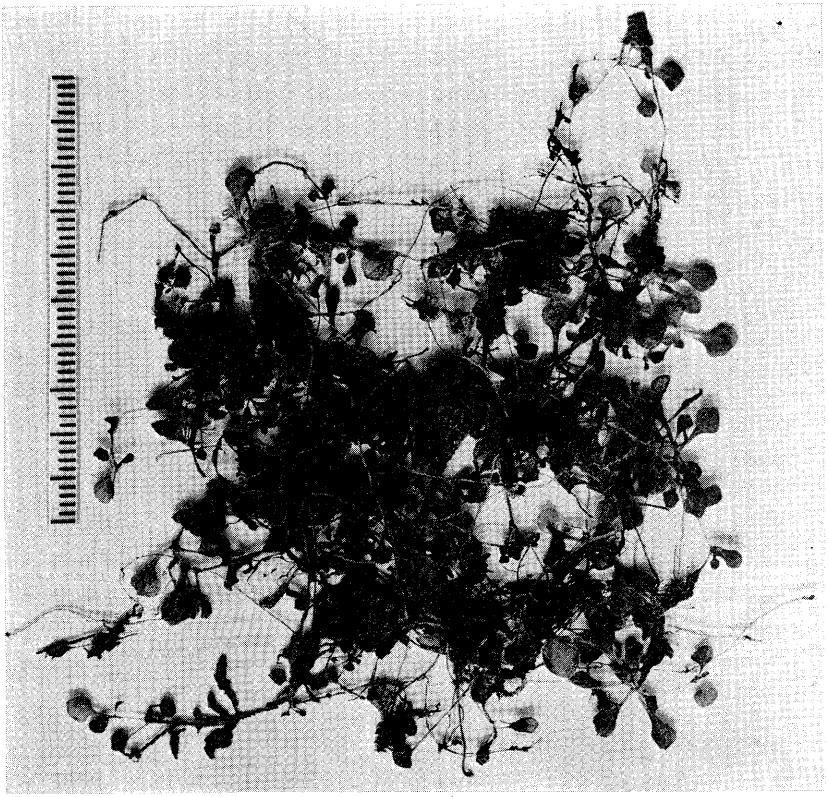

Fig. 1. *Sedum subtile* collected by Bunzo Hayata in Cha Pa, Tonkin.

S. Griffithii C. B. Clarke from eastern Himalaya (Sikkim & Bhutan) and *S. Zentaro-Tashiroi* Makino from Japan (endemic to Tsushima Island). Except Cha Pa, the total range of *S. subtile* and the related species (Fig. 2) is common with the ranges of various species designated as the group II of Japono-Himalayan element (Kanai 1963) or Japono-Himalayan related plants (Kanai 1966). Its isolated occurrence at Cha Pa may be attributed to climatic changes in the latest glacial period, as I considered in the cases of *S. Kingdonii* H. Ohba and some Himalayan species of Sedoideae at Mt. Victoria, Burma (Ohba 1981) and also *S. Susannae* R.-Hamet at Doi Chiendao, N Thailand (Ohba 1982). It is assumed that the Asiatic species of *Sedum* hardly adapt themselves to the tropics and take refuge at mountain tops with the (cool) temeperate environments through

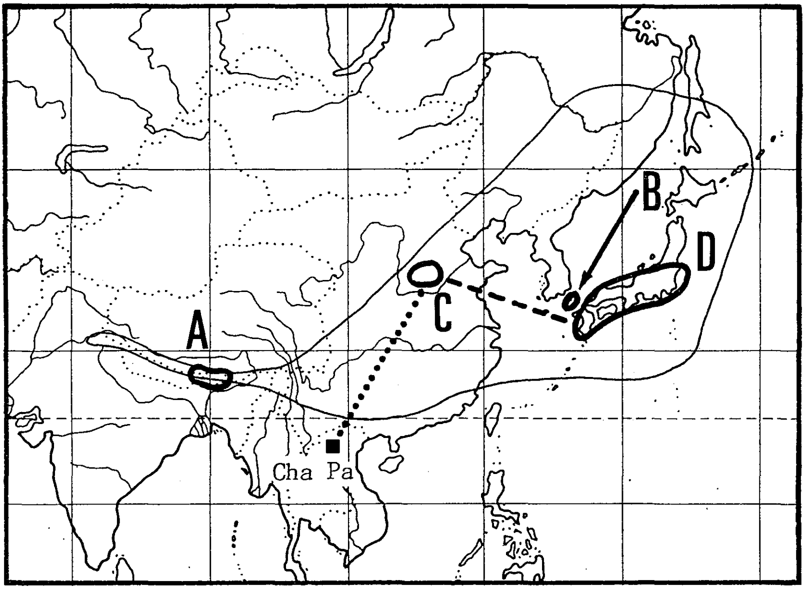

Fig. 2. Distribution of *Sedum Griffithii* (A), *S. Zentaro-Tashiroi* (B), *S. subtile* subsp. *chinense* (C) and subsp. *subtile* (D). The fine line showing the area of Japono-Himalayan related plants by Kanai (1966).

interglacial periods.

Sedum subtile Miq., Ann. Mus. Bot. Lugd.-Batav. **2**: 156 (1866), excl. var. —Maxim. in Bull. Acad. Sci. St.-Pétersb. **29**: 153 (1883)—Berger in Engl. et Prantl, Nat. Pflan.-fam. 2 Aufl. **18a**: 457 (1930)—Ohwi, Fl. Jap. 591 (1953); Engl. ed. 497 (1965)—Ohba in Satake, Wild Flow. Japan **2**: 145, pl. 137-5 (1982).

Specimen examined from Indochina. [Tonkin] Cha Pa (B. Hayata s.n. 17 June 1917, TI).

subsp. **chinense** H. Ohba, subsp. nov.

A typo foliis rosulatis lineari-oblanceolatis (non late obovatis-spathulatis) et caulium plusminusve isomorphis 5-15 mm longis glandulis oblongis (nec triangulari-obovatis) bene differt. Haec subspecies stylis longioribus ovulis in quoque loculo 8-10 (non 16-18), sub anthesi stolonibus non elongatis a *S. Griffithii* C.B. Clarke statim dignoscenda.

Specimens examined. China. Shansi reg. austr. Yuan-chu distr.: Shuiwangping, alt. ca 1950 m. In saxo umbroso in silva frondosa (H. Smith 6664, UPS—

Holotypus); Ye-cho-shan, alt. ca 1500 m. In saxo muscoso rivuli (H. Smith 6749, UPS).

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故早田文蔵教授は1917年と1921-22年に2度にわたりインドシナの植物を調査し，約1万点に達する標本を持ち帰った。しかしながら，これらの標本は一部が先生自身により研究されただけで，大半は未同定のものが多いまま保管されてきた。本文は，先生がトンキン（現ベトナム）の Cha Pa で採集したマンネングサ属の標本がヒメレンゲであることを報告し，植物地理学上の意義を述べたものである。Lecomte のインドシナ植物誌をみる限り，そもそもインドシナからはマンネングサ属植物はまったく報告がなく，先生の採集された標本は同地域からの最初のものである。ヒメレンゲは，日本と中国に隔離分布する2亜種からなる。Cha Pa のものは日本の亜種とは異なるが標本が悪く，残念ながら中国産の亜種に一致するかどうか判断し難い。マンネングサ亜科では氷期の南下とその後の遺存の顕著な例をタイ北部のチェンダオ山の *Sedum Susannae* R.-Hamet (Ohba 1982) やビルマ中部のビクトリア山の *Sedum Kingdonii* H. Ohba, *S. victorianum* Jansson, *Rhodiola chrysanthemifolia* (Lév.) Fu (Ohba 1981) の存在を根拠に議論した。Cha Pa のヒメレンゲも氷期における分布域の南下とその後の遺存であると考えられる。